

In the claims:

1. **(Currently amended)** A method for inducing ~~[[a]]~~ an undifferentiated cell having activin receptors responsive to activin to differentiate to a neuronal cell phenotype, which undifferentiated cell is provided in a culture of two or more cells in vitro, comprising
providing ~~contacting~~ said cell with a first agent that antagonizes the biological action of activin selected from follistatin, proteins that include at least one follistatin molecule, an α 2-macroglobulin, and an inhibin, and
a second agent which agent is a neurotrophic factor that enhances a particular differentiation fate of the cell,
wherein said first agent and second agent are provided in amounts sufficient to induce differentiation of said cell to a neuronal cell phenotype ~~an agent which antagonizes the biological action of at least one polypeptide growth factor of the Transforming Growth Factor β (TGF β) family, said growth factor normally inducing said cell to differentiate to a non-neuronal phenotype.~~
2. **(Currently amended)** The method of claim 1, wherein said first ~~antagonizing~~ agent inhibits the biological activity of activin ~~said growth factor~~ by preventing activin ~~said growth factor~~ from binding growth factor receptors on the surface of said cell.
3. **(Currently amended)** The method of claim 2, wherein said first ~~antagonizing~~ agent binds said growth factor and sequesters said growth factor such that it cannot bind said growth factor receptors.
4. **(Currently amended)** The method of claim 3, wherein said first ~~antagonizing~~ agent is selected from a group consisting of a follistatin, an α 2-macroglobulin, and a protein containing at least one follistatin module, ~~and a truncated receptor for a growth factor of the TGF β family.~~
- 5-6. **(Canceled)**

7. **(Currently amended)** The method of claim 2, wherein said first ~~antagonizing~~ agent inhibits binding of said growth factor with said growth factor receptors via its own binding to said growth factor receptor.

8. **(Currently amended)** The method of claim 7, wherein said first ~~antagonizing~~ agent is an inhibin.

9-14. **(Canceled)**

15. **(Currently amended)** The method of claim 1, wherein said second agent is selected from ~~cell is further contacted with a second growth factor having neurotrophic or neural inductive activity, such as a nerve growth factor,~~ ciliary neurotrophic growth factor, Schwannoma-derived ~~schwanoma-derived~~ growth factor, glial growth factor, striatal-derived neuronotrophic factor, platelet-derived growth factor, scatter factor, a vertebrate *hedgehog* protein, noggin, and a ligand for a *Notch* receptor.

16. **(Canceled)**

17. **(Currently amended)** The method of claim 1, wherein said neuronal cell phenotype comprises a neural progenitor cell.

18. **(Currently amended)** The method of claim 1, wherein said neuronal progenitor cell is selected from a group consisting of a melanocyte progenitor cell, a glial progenitor cell, a sensory neuron progenitor cell, a sympatho-adrenal progenitor cell, a parasympathetic progenitor cell, and an enteric progenitor cell.

19. **(Currently amended)** The method of claim 1, wherein said neuronal cell phenotype is a terminally-differentiated neuronal cell.

20. **(Currently amended)** The method of claim 19, wherein said terminally-differentiated neuronal cell is selected from a group consisting of a microglial cell, a macroglial cell, a schwann cell, a cholinergic cell, a peptidergic cell, and a serotonergic ~~serotenergie~~ cell.
21. **(Currently amended)** The method of claim 1, wherein said undifferentiated cell is selected from ~~a group consisting of~~ an embryonic cell, a fetal cell, and a neonatal cell.
- 22-40. **(Canceled)**
41. **(Withdrawn)** A method for identifying a neuralizing activity, comprising
- (i) culturing animal cap cells derived from an embryo, or equivalent cells thereof, in the presence of a polypeptide growth factor of the TGF- β family, said growth factor normally inducing said cells to differentiate to a non-neuronal phenotype,
 - (ii) contacting said cells with a candidate agent, and
 - (iii) detecting the neuronal differentiation of any of said cells,
- wherein neuronal differentiation of said cells in the presence of said candidate agent is indicative of a neuralizing activity.
42. **(Withdrawn)** The method of claim 41, wherein said growth factor is activin.
43. **(Withdrawn)** The method of claim 41, wherein said neuronal differentiation is detected by scoring for the presence of a neural-specific marker on the surface of said cells.
44. **(Withdrawn)** The method of claim 43, wherein said neural specific marker is NCAM, and the presence of NCAM is scored using a detectably labeled anti-NCAM antibody.